

AMENDMENT TO THE CLAIMS

Please amend the claims as follows:

1. (currently amended) An orthodontic component, comprising a rigid backbone polymer, the rigid backbone polymer at least partially comprising a first arylene or heteroarylene moiety joined to a second arylene or heteroarylene moiety by a covalent bond between adjoining ring carbon atoms of the arylene or heteroarylene moieties, including at least one of a compatibilizing side-group or a solubilizing side group.
2. (currently amended) The orthodontic component of claim 1, wherein the polymer is used in a neat form and the component has isotropic properties.
3. (original) The orthodontic component of claim 1, further comprising reinforcing fibers.
4. (original) The orthodontic component of claim 1, further comprising filler.
5. (original) The orthodontic component of claim 1, further comprising a non-rigid backbone polymer.
6. (previously presented) The orthodontic component of claim 1, in the form of a wire having a shape capable of providing a good fit in an orthodontic bracket.
7. (currently amended) The orthodontic component of claim 451, wherein the side group reacts with a non-rigid backbone polymer and thereby reduces phase separation.
8. (currently amended) An orthodontic component, comprising a thermoplastic polymer and without a reinforcing agent, wherein the thermoplastic polymer ~~in the neat resin form~~ has a ~~an~~ unreinforced tensile strength of at least about 150 MPa and a ~~an~~

unreinforced tensile modulus of at least about 4 GPa.

9. (currently amended) The orthodontic component of claim 8, wherein the polymer in the neat resin form has an ~~unreinforced~~ elastic deformation of at least about 30.

10. (currently amended) The orthodontic component of claim 8, wherein the polymer ~~in the neat resin form~~ has a ~~an unreinforced~~ tensile strength of at least about 200 MPa and a ~~an unreinforced~~ tensile modulus of at least about 8 GPa.

11. (original) The orthodontic component of claim 8, having a refractive index of about 1.66 to about 1.70.

12. (original) The orthodontic component of claim 8, further comprising a reinforcing agent.

13. (original) The orthodontic component of claim 8, consisting essentially of the thermoplastic polymer and no more than 5 percent by component weight of a reinforcing agent.

14. (original) The orthodontic component of claim 8, selected from a force delivery component, a wire, an attachment and an auxiliary.

15. (original) The orthodontic component of claim 8, comprising a wire wherein the wire has a cross section that is not circular and not quadrilateral.

16. (original) The orthodontic component of claim 8, comprising a wire wherein the wire has a cross sectional shape selected from a circle, a portion of a circle delineated by two radii of the circle, a polygon, an "I" shape, a "C" shape, an "L" shape, a "T" shape or a combination thereof.

17. (original) The orthodontic component of claim 8, comprising a bracket having a slot, wherein the slot is configured to interengage with wires of different cross-sectional shapes to provide a good fit.

18. (original) The orthodontic component of claim 8, comprising a wire, wherein the wire has a different cross section at different points along its length.

19. (original) The orthodontic component of claim 8, having a Rockwell B hardness of at least about 75.

20. (original) The orthodontic component of claim 8, having a pencil hardness of at least about 7H.

21. (original) The orthodontic component of claim 8, comprising at least a second polymer material.

22. (original) The orthodontic component of claim 8, consisting essentially of the thermoplastic polymer.

23. (previously presented) The orthodontic component of claim 8, wherein the thermoplastic polymer is in the form of a coating over at least part of a core.

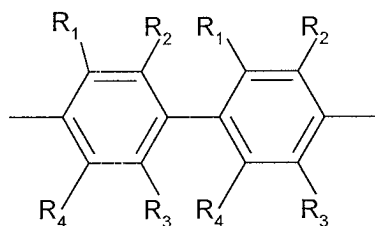
24. to 35. (cancelled)

36. (cancelled)

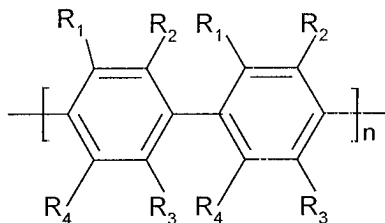
37. (currently amended) The orthodontic component of claim 1 comprising a wherein ~~the rigid backbone polymer comprises arylene or heteroarylene moieties joined together by 1,4 covalent bond bonds between adjoining ring carbon atoms.~~

38. (currently amended) The orthodontic component of claim 1 wherein the rigid backbone polymer comprises a plurality of ~~arylene or heteroarylene moieties joined together by covalent bonds and between adjoining ring carbon atoms~~[[,]] wherein at least about 95% of the covalent bonds are substantially parallel to each other.

39. (previously presented) The orthodontic component of claim 1 wherein the rigid backbone polymer comprises the following structure:



40. (previously presented) The orthodontic component of claim 1 wherein the rigid backbone polymer comprises the following structure:



and n is an integer from 2 to about 8.

41. (previously presented) The orthodontic component of claim 8 wherein the thermoplastic polymer is used in a neat form.

42. (previously presented) An orthodontic component, comprising a thermoplastic polymer, wherein the thermoplastic polymer has an unreinforced tensile strength of at least about 150 MPa and an unreinforced tensile modulus of at least about 4 GPa.

43. (currently amended) The orthodontic component of claim 42 41, wherein the thermoplastic polymer comprises a first arylene or heteroarylene moiety joined to a second arylene or heteroarylene moiety by a covalent bond between adjoining ring carbon atoms of the arylene or heteroarylene moieties ~~arylene or heteroarylene moieties joined together by covalent bonds between adjoining ring carbon atoms.~~

44. (currently amended) The orthodontic component of claim 8 [[41]], further comprising a reinforcing agent.

45. (new) The orthodontic component of claim 1 wherein the rigid backbone polymer comprises at least one of a compatibilizing side group or a solubilizing side group.